

## New Species of Two *Psammocinia* Horny Sponges (Dictyoceratida: Irciniidae) from Korea

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### ABSTRACT

Two new species of the family Irciniidae, *Psammocinia wandoensis* n. sp. and *P. samyangensis* n. sp., are described. They were collected from the South Sea, Korea. *P. wandoensis* n. sp. closely resembles *P. rugosa* (Lendenfeld, 1889) from Australia in morphology, but new species differs from *P. rugosa* by the filaments. Though *P. samyangensis* n. sp. is very similar to *P. jejuensis*, but our species differs from *P. Jejuensis* by the fibre shape.

Key words: new species, horny sponge, *Psammocinia*, Korea

### INTRODUCTION

To date, the genus *Psammocinia* has been poorly studied so far. Only four species are reported by Lendenfeld (1889), and one is recorded by Bergquist (1995) from New Caledonia. Three species are reported by Cook and Bergquist (1996) from New Zealand. Three *Psammocinia* species are recorded from Korea by Sim (1998).

The characteristic of this genus is that it has large quantities of sand grains throughout its fibres, matrices and surface, and also has many fine collagenous filaments which are special characters of the family Irciniidae (Bergquist, 1980). Bergquist (1995) noted that filaments are separated from the spongin fibre skeleton. In this study we found that the filaments extend from the fibres, which are permeated by many pores.

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In this study, the specimens from Wando Island were collected by skin diving, Chejudo Island specimens were collected by fishing nets. The characters used in the identification of the *Psammocinia* species are external morphology, fibre type, skeletal pattern and filament size. Light microscopy and SEM (AKASHI, ISI-40) were used for the fibre arrangement and the filaments morphology.

Type specimens are deposited in the Natural History Museum, Hannam University, Daejeon, Korea.

## RESULT

Phylum Porifera Grant, 1836 해면동물 문

Class Demospongiae Sollas, 1885 보통해면 강

Order Dictyoceratida Minchin, 1900 망각해면 목

Family Irciniidae Gray, 1867 가느실해면 과

### 1. *Psammocinia samyangensis* n. sp. 삼양모래해면 (신칭) (Fig. 1 A-J)

**Type specimen.** Holotype (Por. 30, NHM, Hannam Univ.), Samyang 1 dong (Chejudo Island), 9 July 1991, (SCUBA).

**Description.** Specimens irregular mass. Size up to 8 cm long, 3 cm thick and 7 cm wide, attached to rock substrate. Surface filamentous membrane mixed with large sand grains. Low, sharp conules, 1.5-2 mm high, 2-4 mm apart. Colour beige in spirit. Texture soft.

Skeleton: Cortex with many primary fibres, 140-400  $\mu$ m in diameter, with 10-20  $\mu$ m sand core. Secondary fibres, 50-230  $\mu$ m in diameter, mixed with small sand grains. In choanosomes, primary fibres difficult to see due to attached sand (Fig. 1E). Sometimes large oxea mixed with sand are associated with secondary fibres. Sometimes thin secondary fibres connected with large sand like bridge (Fig. 1F). Filaments, 3-8  $\mu$ m, emerge from pores of secondary fibres (Fig. 1G-I). Terminal knob, 10-17.5  $\mu$ m in diameter.

**Remarks.** This new species is similar to *P. jejuensis* (Sim, 1998) but our species differs from the latter by the fibre shape, size, and that secondary fibres rarely contain sand. Hard texture of *P. jejuensis* is also difference with new species.

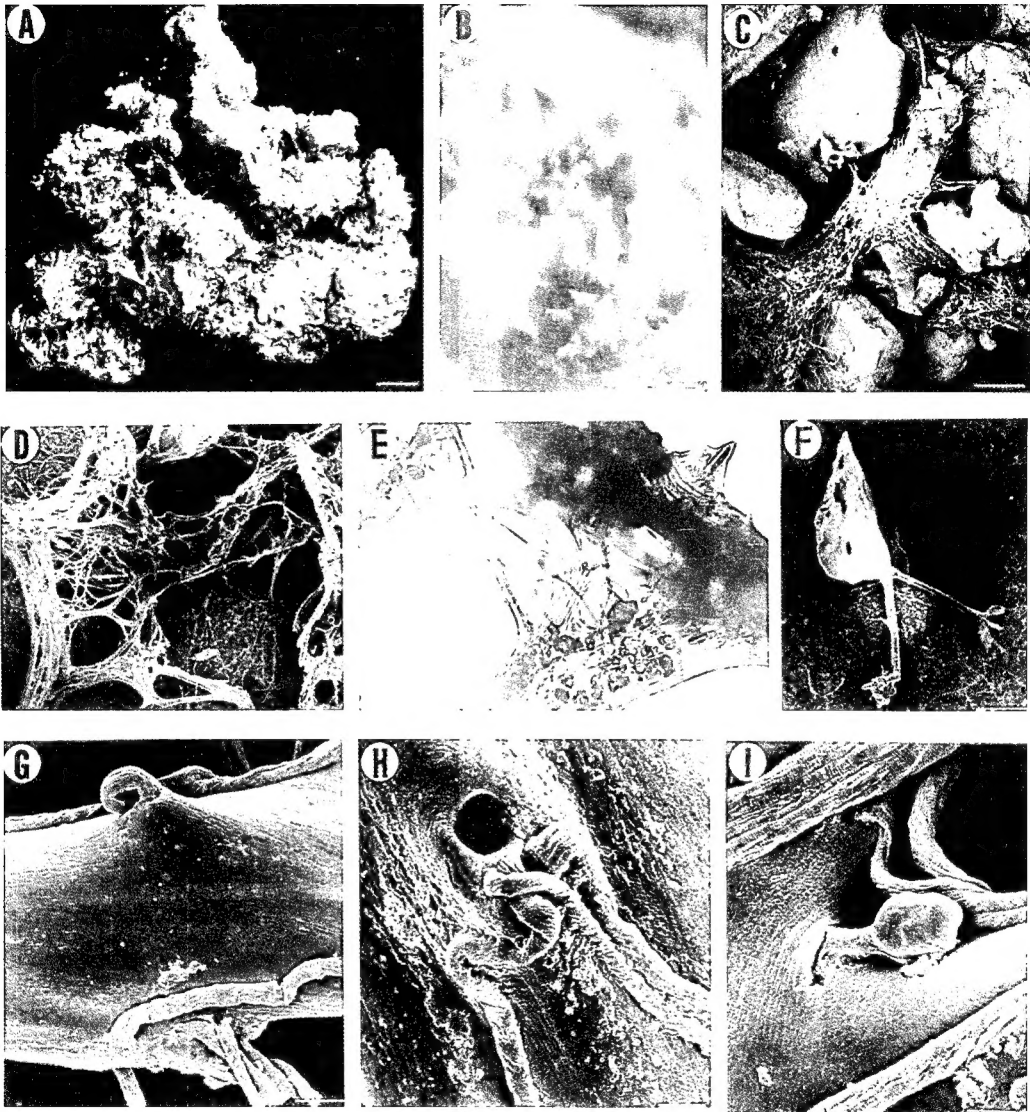
**Etymology.** The specific name, *samyangensis* is named after the type locality.

### 2. *Psammocinia wandoensis* n. sp. 완도모래해면 (신칭) (Fig. 2 A-I)

**Type specimen.** Holotype (Por. 31, NHM, Hannam Univ.), Wando Island, 27 July 1995, 10 m, (sea woman).

**Description.** Irregular lobate sponge. Cylindrical digitate processes arise. Size up to 9 cm long, 2 cm thick and 13 cm wide, attached to rock substrate. Surface covered with low sharp conules, 1-2 mm high, 3-5 mm apart. Oscule on the top, 0.5-1 mm diameter. Numerous pores. Texture firm and compressible. Live specimen dark grey colour.

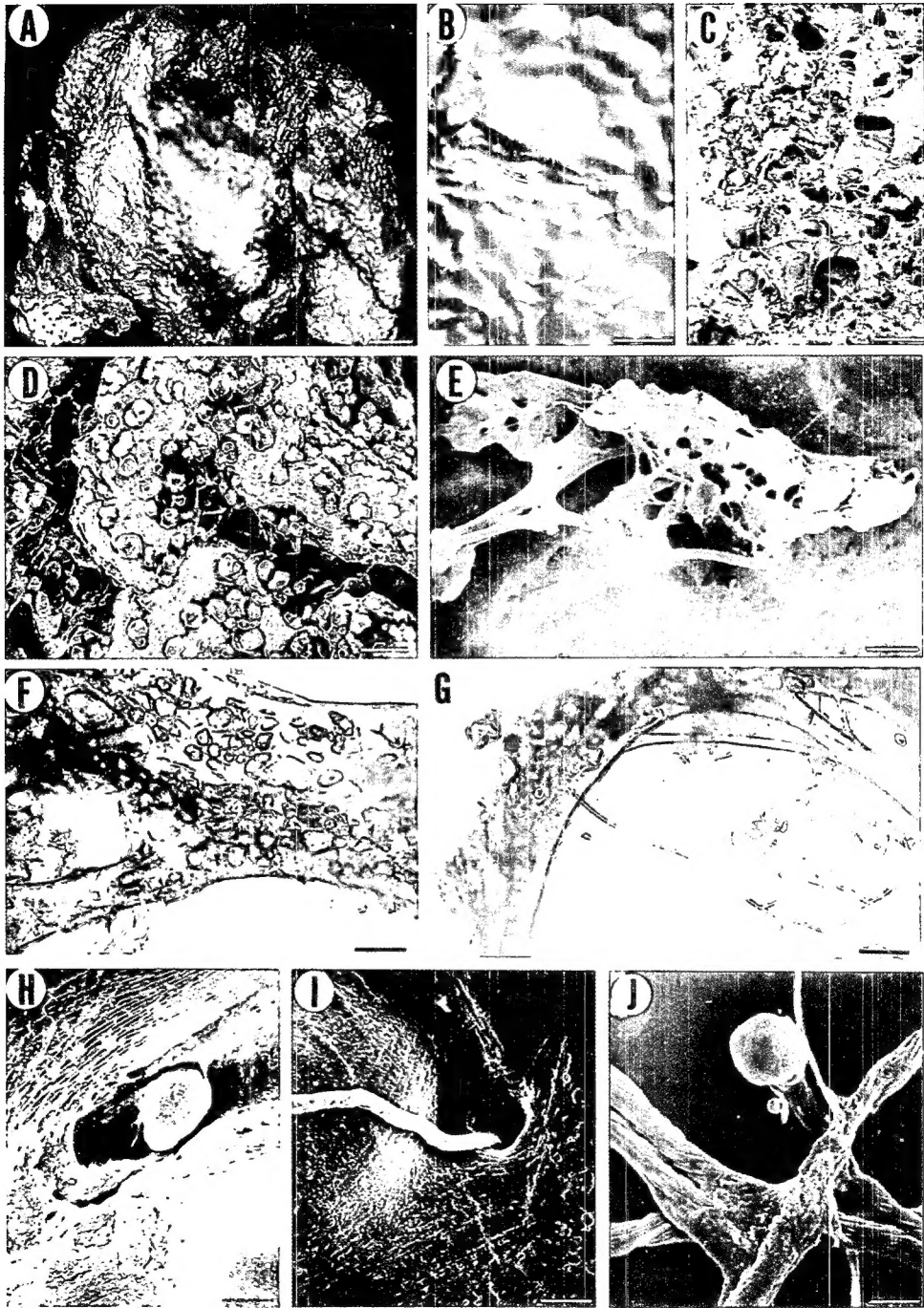
Skeleton: Cortex, 1 mm thick sand crust mixed with black colour sand, 20-120  $\mu$ m in diameter. Many filaments arranged under sand crust. Stout fasciculate columns up to 75-150  $\mu$ m diameter, fibres simple not complex. Sand attached inside the fibres (Fig. 2D). In choanosomes, primary



**Fig. 1.** *Psammocinia samyangensis* n. sp.: A, top-side view showing surface; B, surface of specimen (conules); C, endosome of specimen (transigitional section, SEM); D, Cortex fibre (SEM); E, cortex secondary fibre mixed with sand; F, choanosome secondary fibre (SEM); G-H, filaments started from secondary fibre (SEM); I, terminal knob comes out from the hole of secondary fibre (SEM). Scale bars = 1 cm (A), 5 cm (B), 300 mm (C-D), 200 mm (E), 300 mm (F), 10 mm (G-I).

columns measure 190–600  $\mu\text{m}$  in diameter. Secondary fibres difficult to see. Collagen filaments, fine 2–6  $\mu\text{m}$  in diameter, terminal knob 12–16  $\mu\text{m}$  in diameter (Fig. 2H, G).

**Remarks.** This new species stands out among the *Psammocinia* by the peculiar trellis like column mixed with many small sand grain inside of the fibres. Filaments emerge from the primary and secondary fibres. Around the pore is very rough, sometimes larger than filament diameter. The



**Fig. 2.** *Psammocinia wandoensis* n. sp.: A, side view showing surface; B, surface of specimen (conules); C, endosome of specimen (transitional section, SEM); D, cortex fibre cored with sand; E, fibre of conule (SEM); F, choanosome fibre; G, Cortex primary fibre; H-I, filament comes out from the hole in fibre; J, terminal knob. Scale bars = 2 cm (A), 5 cm (B), 300 mm (C), 200 mm (D), 100 mm (E), 160 mm (F), 100 mm (G), 10 mm (H-J).

filament pore are difficult to see. This species is very closely related to *P. rugosa* (Lendenfeld, 1889) in external morphology.

**Etymology.** The specific name, *wandoensis* is named after the type locality.

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## 한국 모래해면 속 (망각해면 목: 가는실해면 과)의 2신종

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## 요 약

한국의 남해에서 채집된 모래해면 속의 2신종, 삼양모래해면 (*Psammocinia samyangensis* n. sp.)과 완도모래해면 (*P. wandoensis* n. sp.)을 명명하고 기재하였다. 완도모래해면은 호주의 *P. rugosa* (Lendenfeld, 1889)와 외형에서 많이 유사하지만 filaments에서 차이를 나타내며, 삼양모래해면은 제주모래해면 (*P. jejuensis*)과 유사하나 섬유의 형태에서 차이를 나타낸다.